OCCUPATIONAL Hazards

APR 18 1941

APRIL
1941

- Plant Housekeeping at Revere Copper
- How Eaton Manufacturing Keeps House
- Youngstown Sheet and Tube Helps Employees
- The Cost for Eye Protection
- New Frontiers in Industrial Good Housekeeping
- How to Get the Most Out of Industrial Lighting

THE ONLY MANAGEMENT PUBLICATION DEVOTED EXCLUSIVELY TO THE ENGINEERING CONTROL OF:

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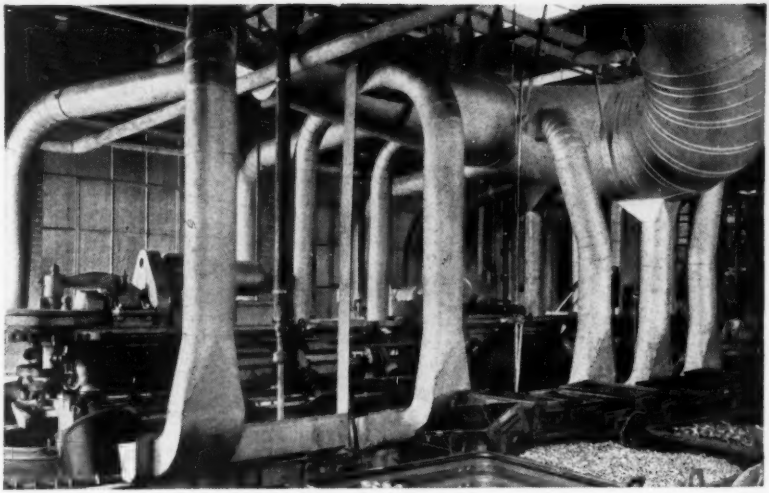

HERE'S EFFECTIVE, ECONOMICAL FUME AND VAPOR REMOVAL FROM PLATING AND PICKLING OPERATIONS

THIS KIRK & BLUM Fume Exhaust System provides adequate ventilation in the small parts pickling and plating department, automotive parts plant, division of one of the large automobile manufacturers.

In many of the nation's leading industrial plants, KIRK & BLUM Systems are rendering similar service . . . safeguarding workers' health, cutting operating costs, helping to SPEED PRODUCTION.

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"Fan Systems for Various Industries"
"Blower Systems for Woodworking Plants"
"Industrial Ovens"

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KIRK & BLUM

DUST AND FUME CONTROL

MORE SHOWERS FOR MEN IN INDUSTRY

● More and more, the health value of shower baths is being recognized — more and more they are becoming a necessary part of the washing facilities in manufacturing plants of all kinds.

Such facilities are now more easily provided through Bradley's contribution—Multi-Stall Showers.

The 5-Stall Shower, installed as a unit, provides five separate stalls—requires less installation work because only three piping connections are required, one for the hot water, one for cold and one for the drain. Five conventional single-stall showers, on the other hand, require five times the amount of piping connections. Each of the curtained stalls of a Bradley Multi-Stall Shower is private, with individual water mixing control and provision against scalding.

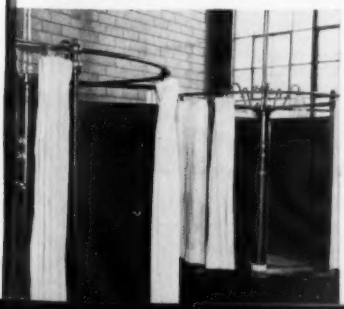
Easy Installation in New or Existing Buildings

Modern, sanitary, economical—Bradley Multi-Stall Showers are partially assembled at the factory and erection on the job is accomplished in less time in either new or existing buildings.

Our Washroom Consultants will gladly survey your requirements and make floor plan recommendations. BRADLEY WASHFOUNTAIN CO., 2259 West Michigan St., Milwaukee, Wisconsin.

BRADLEY
Multi-Stall Showers

Catalog No. 1041
Mailed on Request



A FEW RECENT SHOWER INSTALLATIONS

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Buick Motor Co.
Wright Aeronautical Corp.
Amalgamated Sugar Co.
Cayuga Rock Salt Co.
Ford Motor Co.
Pan American Airways
Coca-Cola Co.
Hathaway Baking Co.
United States Gypsum Co.
Universal Atlas Cement Co.
American Cyanamid & Chemical Co.
Loose-Wiles Biscuit Co.
Atlas Powder Co.
Colgate-Palmolive-Peet Co.
Du Pont
Lever Bros. Co.
Monsanto Chemical Co.
Pittsburgh Plate Glass Co.
Ira Wilson Dairy Company
Westinghouse
Johns-Manville Co.
Simmons Company
Detroit Stoker Company
LadishDropForgeCompany
Boston Edison Company
Atlantic Refining Co.
Corning Glass Works
Molybdenum Corp.
Bethlehem Steel Co.
Beloit Iron Works
Gulf Refining Co.
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Naval Torpedo Station
Acme Breweries
New York State Armory
Jenkins Bros.

It folds to fit the vest pocket.

This Shield Satisfies a *Real* Need—

Operators of buffing, polishing and wood working machines and men working around spot or flash welding jobs have found that this #25 Jackson Eyeshield provides unusually fine eye protection at low cost.

The unique design of this flexible plastacele shield provides comfortable eye protection *plus* maximum vision. It's extremely light, spark resisting, *well ventilated.* Available in five shades—clear, smoked, amber, light and dark green.

Write us for address of dealer nearest you.

The Jackson Eyeshield Folder illustrates and describes a wide variety of shields and hoods. Write for your copy today.

JACKSON Eyeshields

JACKSON PRODUCTS

15122 Mack Avenue, Detroit, Michigan

The Order of the Day is OUTPUT!

MORE men — more tools — more efficiency! Industry has no time today for the slowing drag of *Heat-Fag.*

Yet, as the tempo of production speeds up, this unseen danger of *Heat-Fag* increases. As workers sweat, vitally needed salt is lost from their bodies. This salt loss results in increased fatigue, more mistakes, a general slowing up. The defense against HEAT-FAG is simple and inexpensive. Provide Morton's salt tablets in sanitary dispensers at all drinking fountains so workers can help themselves.

DISPENSERS
500 Tablet size - - **$3.25**
1000 Tablet size - - **$4.00**

TABLETS —Case of 9000
10 grain Salt Tablets, **$2.60**

Combination Salt-Dextrose Tablets, per case - - **$3.15**

AVOID HEAT-FAG
USE MORTON'S SALT TABLETS

Place Morton Dispensers At All Drinking Fountains

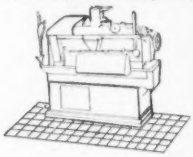
They deliver salt tablets, one at a time. No crushing or waste. Sanitary. Durable. Morton's salt tablets contain the most highly refined salt, pressed into tablet form. Dissolve in less than 40 seconds after swallowing.

Order dispenser and tablets from this ad, or from your distributor.

FREE... write on your firm letterhead for a pocket size sample tube of MORTON'S SALT TABLETS, and new folder, "Heat-Fag and Salt Tablets."

MORTON SALT COMPANY
CHICAGO, ILLINOIS

Wherever they Walk-Make it SAFE with
TEN-LOX
REG. U. S. PAT. OFF.



How many man hours were lost in 1940 in your plant because of accidents caused by slipping? Here's a way to put a stop to it. Give your workmen better foot-gripping power—install TEN-LOX Anti-Slip floor tile and stair treads, and you remove the hazard of accidents caused by slipping. Less accidents lower insurance rates.

TEN-LOX is a cast aluminum alloy embedded with abrasive grits that extend clear through the casting. It provides unusually high anti-slip value under a wide range of conditions—dry, wet, and particularly so when oily. Its anti-slip qualities are not affected by wear. It is easily installed over existing surfaces, over sub-floors or set in fresh concrete. Common uses for TEN-LOX: walkways around oily machinery, runways, ramps, machinery platforms, loading docks, stairs, etc. Get all the facts; write for the new TEN-LOX folder.

TEN-LOX
REG. U. S. PAT. OFF.
A Product of THE NATIONAL BRONZE & ALUMINUM FOUNDRY CO.
8902 LAISY AVENUE • CLEVELAND, OHIO

Housekeeping Inspection

The *Safety Bulletin* of the Arkansas Department of Labor recently presented a series of practical questions on accident hazards for use by superintendents, foremen, or safety inspectors. In part these were:

Housekeeping.—Is there anyone whose regular duty it is to see that rubbish and excess material are kept from the floor, aisles, and from around the various workplaces?

Are general plant clean-ups made at regular intervals? How often?

Floors.—Are floors level, smooth, and free from holes, splinters, protruding nails, and obstructions?

Aisles.—Are passageways provided through shop and around workplaces? Are all such passageways kept free of obstructions? Holes or slick spots?

Machinery.—Is machinery so arranged that there is a free and unobstructed passageway around each machine? Does each workman have plenty of room around his workplace?

Tools.—Are tools kept racked or stored when not in use? Are workmen required to place tools in storage or on racks as soon as through with them?

Are all tools regularly inspected? Are all burred or mushroomed heads immediately dressed off? Are all sprung or damaged wrenches discarded as soon as discovered?

Whose duty is it to inspect tools?

Toilets and washrooms.—Are toilets and washrooms kept in clean and sanitary condition at all times? Are separate toilets provided for men and women? Are separate toilets provided for white and colored?

Fire escapes.—Are approaches to fire escapes unobstructed? Are openings onto fire escapes and other exits marked?

Floor openings.—Are all floor openings covered or guarded?

Useful FREE LITERATURE

The literature briefly described in this department gives important information on products and equipment designed to control occupational hazards. Manufacturers' technical executives tell of the features to be found in their goods. Be sure to get all available data through this literature before buying. Note those items desired on coupon below and mail. See pages 34, 35, 36 and 37 for New Ideas.

395—SPARKPROOF FLOORS — UNITED LABORATORIES, INC.—Laboratory report tells of the test this material has been subjected to for non-sparking. Guaranteed to provide sparkproof floors.

396—SANITATION EQUIPMENT—CRANE COMPANY—32 page book gives full information on Crane fixtures for industrial and commercial buildings. Illustrated in detail.

397—MAN-COOLING FANS — EMERSON ELECTRIC MFG. COMPANY—Book No. D580 covers their complete line of fans. Engineering specifications, list prices and operating features are detailed.

398—DRINKING FOUNTAINS — HALSEY TAYLOR COMPANY—24 page attractively done booklet points out their new styles of drinking fountain equipment. Wall, pedestal, and electric water cooler apparatus are all described.

399—SAFE MATTING—MELFLEX PRODUCTS COMPANY—In a booklet specifically designed for industry. Melflex describes their line of safety mats and treads. This is as complete a booklet on rubber matting as has been published.

400—SAFE RUBBER SOCKETS—ERICSON MFG. COMPANY—Pamphlet tells how this rubber socket banishes shocks and shorts. Recommended for damp places.

401—GOOD HOUSEPEEPING—BURNITOL MFG. COMPANY—A pamphlet describes how their paper cuspidors assist in the Good Housekeeping Program. Representative users, prices and trial offer are listed.

402—INFECTION PREVENTIVE—WEST DISINFECTING COMPANY—Literature available on soaps and creams designed to cut down industry's enormous skin disease toll.

403—MAINTENANCE MATERIALS—S. C. LAWLOR COMPANY—32 page booklet tells of scrubbing, polishing and mopping equipment. Booklet develops story of how to cut floor cleaning costs.

404—WET DRESSINGS—DOME CHEMICALS, INC.—Pamphlet tells of uses for wet dressings and how these products guard against infections. Free sample available.

405—ELECTRIC HOISTS—MANNING, MAXWELL & MOORE, INC.—Pictorial presentation shows hoists in use, gives complete specifications and user benefits.

406—DUST CONTROL—AMERICAN FOUNDRY EQUIPMENT CO.—In a recently published, 12-page booklet discusses (1) reasons why costly dust conditions should be controlled (2) how dust problems can be controlled with American Dust Collectors.

FREE LITERATURE COUPON Clip out and paste on postcard or enclose in envelope. Mail to: OCCUPATIONAL HAZARDS, 812 Huron Road, Cleveland, Ohio.

Nos. of desired items .....

Firm Name .....

Your Name ..... Position .....

Street and Number of Your Firm .....

City ..... State .....

FL-29

Why use a Tank where only a "Tin Hat" is needed?

Safety Shoes don't need to be heavy clumpers. In fact, workers prefer them to be as much like their regular dress shoes as possible—in looks, in feel, and especially in lightness.

It is just such lighter weight Safety Shoes that Thom McAn has pioneered. Workers like them, wear them without urging. Insurance company experts commend them, too, as having every safety essential including the new Austempered steel toe boxes.

Thom McAn also offers a new PACKAGED Foot Safety plan which cuts accident losses, yet costs you nothing. Here are the highlights of

PACKAGED Foot Safety

1. **We** stock our Fitmaster Safety Shoes for your plant in our Thom McAn shoe stores—without cost or obligation on your part.
2. **We** fit our Fitmaster Safety Shoes with our own trained men right in our stores, and take full responsibility for assuring your workers' foot comfort.
3. **We** please your men (an important point these days), because our Fitmaster Safety Shoes look better, feel better, cost them less than other brands.

ONLY Thom McAn offers Foot Safety **PACKAGED.** For complete information regarding this modern, efficient, unique new plan—

Write: THOM McAN—SAFETY SHOE DIVISION—25 WEST 43RD STREET, NEW YORK, N. Y.

644 STORES IN 347 CITIES • 50 MILLION PAIRS SOLD SINCE 1935 ALONE

OCCUPATIONAL Hazards

APRIL 1941

VOLUME 3 NUMBER 7

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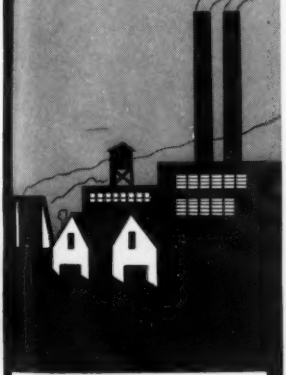


Circulation this issue more than 23,000 copies

BY SUBSCRIPTION, one year, $1.00. Single copies, Ten cents.

Good Housekeeping Inspections ... *THE HOW AND WHY*

By C. S. PHILLIPS, Personnel Director Revere Copper and Brass Inc., Rome, N.Y.

Revere Copper and Brass believes that management should take active part in housekeeping practices. Their plan is sound and thorough.

SOME years ago a statement was made that "a clean plant is a safe plant." Those of us who have been closely allied with accident prevention can attest to the truth of that statement.

In addition to the reduction in accidents it has also been our observation that a clean, orderly plant instills pride in the employee with a resulting high calibre of workmanship and plant morale.

Although we have made tremendous strides during the past few years in providing adequate and clean washrooms, locker facilities, and well lighted and ventilated work shops, we still find it advisable to provide some additional incentive to our employees in keeping work places in a satisfactory condition. At our various plants we have adopted two distinctly different methods which will be described herewith:

I. An interdepartment and intersection cleanliness contest sponsored by management and providing a prize for both the best department and section has been operating very successfully for some time. Once a week a committee of three management representatives inspects each department. A report of all unclean and disorderly conditions is made to the department superintendent with a copy to the Works Manager and an additional one for the subsequent inspection committee. For each unsatisfactory condition a demerit is charged to the department and if the condition is not rectified within one week an additional demerit is chalked up against the department. The type of report used follows.

At the end of the month the demerits for each department are totaled and a rating is arrived at by getting the percentage of demerits to the total number of employees in each department. For example: Department A with 175 employees had 25 demerits which gave it a rating of 85.7, department B with 149 employees and 29 demerits or a rating of 80.5. The standings of each department are reported in a special bulletin which is posted each month in every department.

Awards Given

Each month after the ratings have been ascertained a mass meeting is held at the close of the lunch period and the names of the employees in the winning department are placed in a box from which is

drawn the name of the recipient of the prize for that month. The winner's picture is then taken and is posted on a special bulletin board. At this time a short talk on safety or plant cleanliness is given by a representative of management. These are broadcast to insure that everyone will hear what is taking place.

A second prize is awarded the individual whose name is drawn from the unit having the best record within the winning department. The rating for the unit is established in the same manner as for the entire department.

A plaque has been provided on which is inscribed the name of the winning department each month. The head of the department receives the plaque from the previous months winner at the mass meeting. At the end of the year the department which has won the plaque the greatest number of times receives it permanently.

Plan Number Two

This plan differs from the one previously described, in that the appeal is made primarily through the medium of a bonus penalty imposed on the supervision whose departments receive the lowest ratings.

Each department is inspected once a month by a committee of three consisting of the safety engineer, a member of the industrial engineering department and the chief supervisor of the area inspected. Each inspector is furnished a copy of the form "Inspec-

---

OUR AIM

A CLEAN PLANT, IS A SAFE PLANT

REVERE COPPER AND BRASS INCORPORATED

..... **Plant**

Clean Up Order

.....**1941** **No**.....

Mr. .... **Supt.** ..... **Dept.**

The Plant Cleanliness Committee charged your department with a demerit on account of the following condition:

.....

.....

.....

.....

.....

Chairman .....

You are allowed one week to correct the above condition and for the return of this order to the chairman; otherwise you will be penalized an additional demerit. Chairman, Plant Cleanliness Committee: The above condition was corrected on

..... **1941.**

.....**Supt.**

REVERE COPPER AND BRASS INCORPORATED

Rome Division

GOOD HOUSEKEEPING

INSPECTION GRADING SHEET

Area: _____ Area Supervisor: _____ Date: _____

A—ORDERLINESS, CLEANLINESS

(Cluttered, out of place, unnecessary, dirty, defaced, greasy, unsafe).

1. Floors, aisles, storage space ....
2. Wagons, trucks, conveyors ....
3. Desks, files, foremen's areas, office ....
4. Corners, out-of-way places ....
5. Machines, furnaces ....
6. Work places, tables, benches ....
7. Tool & supply cupboards or containers ....
8. Tool cribs or areas ....
9. Mechanics' benches or areas ....
10. Washrooms, toilets, fountains ....
11. Lockers ....
12. Personal belongings. ....

B—SCRAP AND RUBBISH

1. Inadequate or improper containers ....
2. Containers full, unserviced ....
3. Containers badly positioned ....
4. Scrap containers not tagged ....
5. Rubbish in scrap containers ....

C—TOOLS AND SUPPLIES

1. Inadequate for purpose ....
2. Wrong use ....
3. No place for ....
4. Loss, damage or waste of ....

D—MATERIALS

1. Badly piled or blocked ....
2. No ticket or identification ....
3. Should be stocked, scrapped or otherwise disposed of. ....

E—POWER (Wastage, Leakage)

1. Current ....
2. Steam ....
3. Compressed air ....
4. Heat, fuel, light. ....

F—LIGHT AND VENTILATION

1. Condition of fans, blowers, hoods, fixtures ....
2. Inadequate light, air, ventilation ....
3. Obstructed by dirt, etc. ....

G—MAINTENANCE (Repairs, Overhauls, Replacements)

1. Floors, doors, walls, windows ....
2. Wiring, Service pipes, etc. ....
3. Machines ....
4. Hoists, Tractors, Motors ....
5. Other machine accessories ....
6. Cranes, tractors, conveyors ....
7. Wagons, trucks ....
8. Tables, stands, benches ....
9. Racks, trays, skids, platforms ....
10. Miscellaneous equipment ....

H—SAFETY

1. Breach of safety rules ....
2. Unsafe practice ....
3. Hazards of position, as from falling objects ....
4. Hazards of cold, wet, fumes, poisons, dust, etc. ....
5. Accessibility of stretchers, fire extinguishers ....
6. Failure to instruct ....

I—GENERAL

1. Conditions as to orderliness ....
2. Conditions as to congestion ....
3. Conditions as to safety ....

INSPECTOR _____

tion Grading Sheet" on which the various items are to be checked and rated.

Following the inspection a detailed report is sent to the department head explaining the ratings and making recommendations for improvement.

The adjustment of the monthly supervision bonus has been limited to either a maximum additional award of 5% or a maximum penalty of an equal amount.

From experience, we have found that both plans result in more interest in plant cleanliness and that some additional incentive is desirable. It has also been our observation that plan #1 has been the most successful, primarily because it enlists the interest of the employee as well as the supervision.

Navy Embarks on Health Program

Acting Secretary of the Navy Forrestal announces an expansion of the Navy's efforts to safeguard health of an increasing force of shipyard and other shore workers.

An industrial health office will be established in each naval district to minimize occupational diseases. Efforts will be made to minimize dangers from fire, dust, fumes and solvents.

The offices will have the cooperation of the public health service. They will be staffed by Medical Corps officers who are to undergo three months of intensive preparation. The first group is studying at the Harvard University School of Public Health.

with

PLASTIC ROCK

SPARKPROOF

and

SLIP PROOF

FOR those industrial operations where spark-proof floors are a must, specify Plastic Rock. Now in use where plant operations are dangerous. Material has withstood every practical test. All ingredients in Plastic Rock surfacing are 100% non-conductive. Also non-metallic and inert. Plastic Rock is slip-proof, wet or dry. Absolutely no cracks. Five years use shows no wear.

Ask for Reports 220-H and 220-S.

UNITED LABORATORIES, INC.

16801 EUCLID AVENUE • CLEVELAND, OHIO

Worker protected for Stelliting.

Eaton *KEEPS HOUSE FOR TEN PLANTS*

By W. A. LOGAN
Eaton Manufacturing Co.
Cleveland, Ohio

AN AUTOMOTIVE parts manufacturer, with some ten divisions located in Ohio and Michigan, would naturally have a diversity of products, processes and occupational hazards. Fortunately, though, our management's active concern over health and safety activities has kept our plants reasonably free of employee problems.

The Eaton Manufacturing Company with headquarters in Cleveland, Ohio, manufactures products, some of which are a part of every motor car and truck built in America. These include axles, engines valves, valve lifters, valve seat inserts, cylinder liners, coil springs, leaf springs, castings, heaters, stampings, spring washers, bumpers, bumper guards and snap rings.

Safety appliances attached to worker's wrists automatically pulls the hands from between the upper and lower dies when the press operates.

The Boss and the Employees Get Together at Eaton. A Relationship That Brings Good Results.

Some Hazardous Conditions

Hazards vary in the different plants. Stamping presses are rated as highly hazardous, while assembling operations have a maximum of safety.

The handling of steel coated with rust preventatives sometimes causes skin infection; a problem solved by suggesting a change in the formula used by the steel manufacturer.

In plating it has been found that some workers are quite immune to skin infection from plating solutions, while others are highly susceptible. We try to teach each worker how to avoid contact with such solutions and failing in that find other employment for him. There are some salves that promote healing in cases where infections develop and also some protective ointments that are useful in heading off contacts with solutions harmful to the skin.

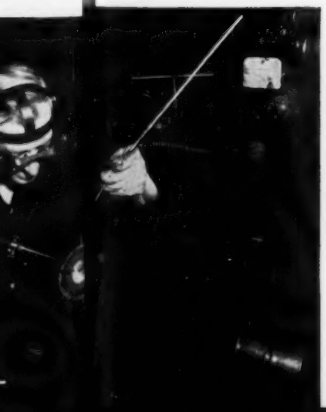
Protective Measures

In the Stamping plant positive safety pull guards are installed on each press and it is the duty of supervision to see that these guards are properly adjusted before an employe starts any operation.

Protective Goggles for spot-welders and grinders are used. In the plating and buffing departments an elaborate system of blowers removes dust and fumes. While Safety Committees are responsible for much of the safety program the company leans to the idea that Safety comes from the top in many of its phases. Perhaps the fact that plant activities are scattered has its influence in this direction.

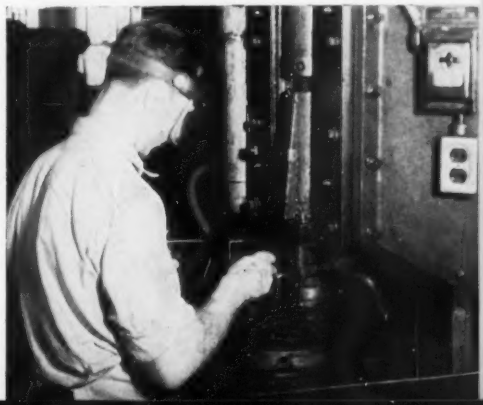
Each Plant submits a monthly report listing all accidents and minor injuries, from cuts, scratches, slivers, etc., to the more serious compensable cases, to the General Personnel Manager and from these reports a general report covering all plants is worked out each month.

In addition a yearly report developed in terms of percentage is also made up and through this



Left: Worker protected for acetylene welding process.

Right: Note use of face shield.



☆

Get ALL 4 BENEFITS with

HOFFMAN

VACUUM CLEANING EQUIPMENT

1 *Save* ON CLEANING COSTS

The most economical way to get *all* the dirt. Vacuum cleaning collects 66% more dirt in same time.

2 *Reduce* PLANT MAINTENANCE

Prevents discoloration and corrosion of painted surfaces and steel work. Brightens walls — postpones repainting.

3 *Prevent* DAMAGE TO PRODUCT

Dust particles filtering down from overhead frequently cause costly damage to products in process of manufacture.

4 *Protect* WORKERS' HEALTH

Protect health of workers. Breathing dust-laden air is a serious health hazard. Hoffman equipment provides safe working conditions.

WRITE FOR NEW BOOKLET "REMOVE THE MENACE OF DUST"

U. S. HOFFMAN

MACHINERY CORPORATION

Air Appliance Division

100 East 12th St., New York, N.Y.

system a spirit of friendly rivalry is engendered, to see which plant can furnish the lowest percentages.

Employees Help

Some plants have employes with artistic and creative ability, who design and make large safety posters and in one plant appears a large sign with a light that burns green as long as no lost-time accident occurs. When one does happen the light changes to red for the balance of that day.

The Axle Division has just gone to considerable expense in painting everything overhead white. This has increased the light in the plant greatly, thus helping to eliminate accidents as well as increase efficient operation.

Safety Shoes Used

Since safety shoes conform more to current styles and are not as clumsy as formerly, there is a greater trend towards wearing them. Some plants arrange to have a neighborhood shoe store carry a stock of such shoes and direct employes there, where they can be properly fitted.

The very fact that a safety program gets the active co-operation and support of the management results in co-operation from the employes, for they feel that the company has a real interest in their welfare and leaving all monetary considerations aside they know that the company wants every employe to return home to his family every day safely and without injury.

★ ★ ★

Convention in New York

Accident prevention and health conservation as vital factors in national defense will be studied by physicians, nurses, safety engineers, and military men at the Twelfth Annual Safety Convention and Exposition in Hotel Pennsylvania, New York, April 22-25.

New problems in maintaining employee health in a period of industrial and military expansion will be discussed by J. J. Bloomfield, Sanitary Engineer, United States Public Health Service in a paper titled "Industrial Hygiene in the National Defense Program." A coordinated program of health conservation in defense industries will be described.

Under the title of "Health and Defense," Dr. C. F. Yeager, medical supervisor, Remington Arms Company, will make an appraisal of the effects of accidents and illness on industrial production under the present expanded conditions. "Preservation of Man Power in Defense Industries" will be the subject of a paper by Charles A. Miller, Petroleum Section, National Safety Council, and a member of the Government's Program for Conservation of Man Power in Defense Industries.

Exhibit planned

In all there will be 52 sessions during the convention, 200 speakers are on the program and exhibits of about 100 manufacturers will be on display in the exposition area. About 6,000 are expected to attend, making it one of New York's larger conventions.

SAFETY DIRECTORS

Say time sheets show fewer lost days when they help guard against dermatitis. For further details write to **Lightfoot Schultz Company, 663 Fifth Avenue, New York, N. Y.**

Instruction in Industrial Hygiene

A new course of graduate instruction in industrial medicine and hygiene is now offered in the School of Medicine, University of Pennsylvania, according to an announcement by Dr. A. N. Richards, Vice-President in charge of Medical Affairs.

Graduate physicians, engineers and chemists are eligible for this one year course, leading to the Master's degree, which includes training in the basic field of public health followed by intensive instruction in industrial hygiene. Special students who do not wish to work for a degree may be admitted, if properly qualified, for the one semester of study in industrial hygiene alone.

Consideration is given in the program to the organization and administration of health services in industry; the cause, diagnosis and treatment of the occupational diseases; methods of investigation and control of industrial hazards; industrial psychology; problems of

JOHNSON ANKLE ACTION RUBBER LADDER SHOES

prevent accidents

★ These shoes are endorsed by insurance companies and safety engineers everywhere.

$1.80 per pair for straight ladders. A trial order will prove their many merits.

JOHNSON LADDER SHOE CO. Eau Claire, Wis.

management; personnel and labor relations; workmen's compensation and other labor legislation.

The study program is under the direction of Theodore Hatch, Associate Professor of Industrial Hygiene in the Department of Public Health and Preventive Medicine, of which Colonel A. Parker Hitchens is Chairman.

Good Housekeeping Hint

A foreman numbered slips of paper from 1 to 24 and asked each of his 24 men to draw a slip.

Then he assigned the men in the order of the numbers drawn to make safety inspections of the department. Each man was assigned one hour for one day.

As each man made his inspection he was asked to report any practice or condition which might lead to an accident. Each day the unsafe items were posted on the bulletin board. At the end of the 24-day period the foreman asked each employee to vote for the one who had made the most worthwhile safety report. The man who was voted as having turned in the most valuable safety suggestion report, based on his hour of inspection, was given a day off with pay as a reward.

These results were realized.

1. There was a thorough clean-up of departmental safety hazards.
2. Everyone in the department became more safety conscious.
3. Each man looked for accident hazards, and, even after the contest was over, suggestions continued to come in.

Courtesy Elliott Service

"PLY-PROTECTED" means Clean, Healthy Hands!

Infected hands mean man-hours of labor lost. Thoughtful executives specify PLY for protection of hands exposed to paints, lacquers, greases, cutting oils, solvents, acids, alkalies or other hazards. There is a PLY formula for each type of exposure. Get genuine PLY—the original protective creams or liquids—proved in industry!

FREE! Write TODAY for your copy of 44-page study on causes and prevention of industrial skin diseases.

The MILBURN Co.

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ON GUARD . . . FOR YOUR HEALTH

The first in a series describing, briefly, health and safety methods employed by the Youngstown Sheet & Tube Company.

Salt tablet dispenser stationed at drinking fountains.

The Story of Salt in Drinking Water

By ROBERT T. FORD, Assistant Safety Supervisor
Youngstown Sheet & Tube Co., Youngstown, Ohio

SALT is used in drinking water for the prevention of heat cramps and heat exhaustion. It is automatically introduced, in measured quantities, into our drinking water in our sixteen central cooling stations. The machines which do this were designed by one of our employees. Every time two and a half gallons of water pass through the meter, an electrical contact is made which operates a solenoid, and drops a measured quantity of salt into the water.

At practically every drinking fountain, we have a salt tablet dispenser also. These tablets supplement the salt used in the drinking water on particularly hot days, or for new men who are just starting to work on a hot job.

Several hundred thousand salt tablets are dispensed in this manner every year. Then there are a few fountains individually cooled, where it was not practical to intro-

Be sure it's a FUNGICIDE

FUNGI (mold germs) cause Athlete's Foot—differ from bacteria. It takes a *fungicide* to kill fungi. Be sure your foot tub solution for Athlete's Foot control is a fungicide. Alta-Co Powder makes such a solution. Verbatim reports by medical authorities on request.

ALTA-CO POWDER

- Kills Athlete's Foot fungi in less than 60 seconds
- Remains stable in solution
- Can be tested instantly by inexperienced help

Alta-Co Powder alone has these 3 important advantages.

Available as a white powder for use where skin tinting is objectionable, or with tracer which leaves a slight yellowish tint when evidence of application is desirable.

FREE: Send for our 32-page brochure on Athlete's Foot. It contains the latest, most authentic information on the control of this serious infection.

THE C. B. DOLGE CO.
Westport, Connecticut

duce salt into the water; so we rely on the salt tablets alone at these points. Back 10 or 12 years ago, during a hot spell, it was not uncommon for the ambulance to be busy all day long, taking men who had been overcome by the heat, to the hospital.

Record Now Perfect

For instance, in 1926, there were 77 disabling heat cases, and hundreds of minor heat cases. Several of these were fatal. It is interesting to note that this figure (77) is just exactly half of ALL our disabling injuries of all kinds in the district for last year. Salt tablets were first used in our plant on a small scale in the summer of 1933. The summer following that, a corps of doctors from Harvard Medical Research Bureau made a study in our plants and, as a result of that, the next summer—1935—we started using considerable salt. Since that summer, we have not had a single disabling heat case. In other words, what was a major problem a few years ago, has been practically eliminated today by the use of salt tablets, and salt in the drinking water.

CONTROL GERMS!

Use "BURNITOL" CUSPIDORS

PROTECT workers health. Remove disease producing germs by using Burnitol Cuspidors. Burnitol Cuspidors are waterproof, wire stitched. They cost only a fraction of one cent and are used by leading manufacturers everywhere.

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The Dollars *and sense of an* Eye Protection *program*

By W. H. LEHMBERG
Safety Development Engineer
American Optical Company
Southbridge, Massachusetts

ETERNAL vigilance is not only the price of safety but the rule of safety. Violate the rule—and accidents happen. For example, consider industrial eye accidents. Every 36 seconds, according to reliable statistics, an unprotected eye is hurt—or, if the worker is wearing safety goggles, an eye is saved.

Here's the way eye accidents can happen. Fred was a good, efficient worker—but careless. One fine day he swished off his safety goggles and leaned over his lathe to make an adjustment. And then it happened.

There was a sharp whirring noise, a flash of steel, and Fred staggered back with a shriek, hand clapped over his right eye. Stuff began to ooze between his fingers. Men came running from all directions, among them Henry, the foreman.

"I knew it," Henry muttered to himself. "I knew that careless fool would get it sooner or later—not wearing his goggles. Hey Jack, get the doctor quick. . . ."

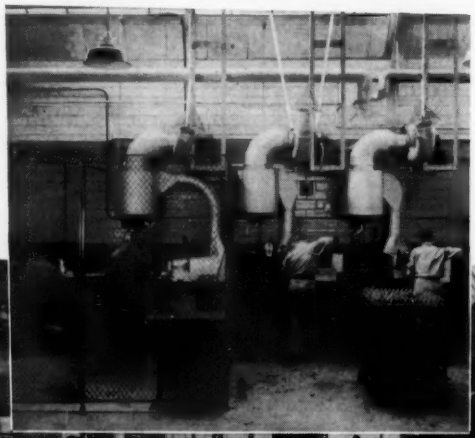
The following story has a far happier ending. Some weeks ago, in the plant of a large iron company, a ladle of molten aluminum exploded. Metal spattered on the worker's safety goggles, and fused on the left lens. The worker's eye was saved—and also thousands of dollars in medical and compensation costs.

And that leads up to the purpose of this article. Eyes are expensive

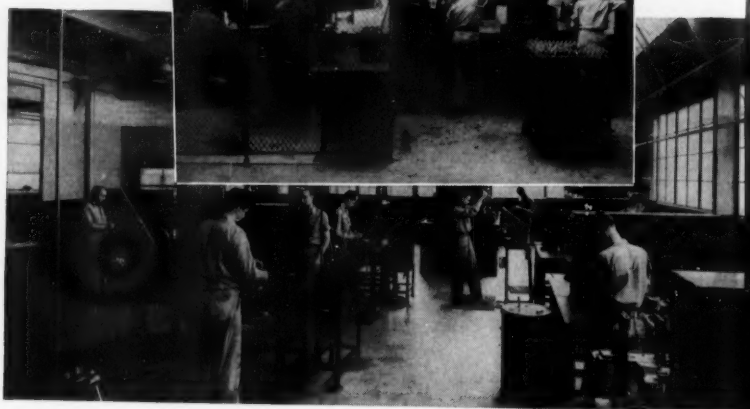
(Please turn to page 38)

Initial Expenditure for Industrial Eye Protection Soon Pays for itself in Reduced Compensation Costs, Medical Expense and Lay-off Time.

INDUSTRIAL expansion is steaming along at a record-breaking pace. Each new plant contains some new idea, new technique, some better way of performing a job. Good housekeeping standards and facilities for employees take important parts in this expansion program. We pictorially present some of these new developments.



All air entering the fuel pump sub-assembly department illustrated, passes through filters which insures absolute cleanliness required by production.



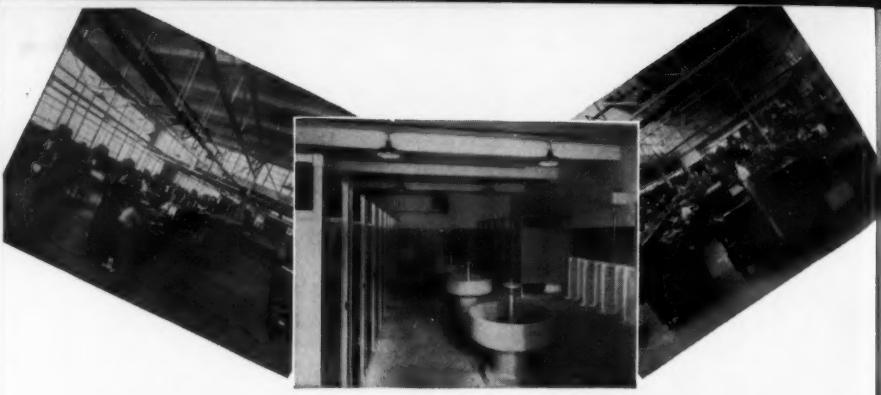
The new building of the Cummins Engine Company at Columbus, Indiana, designed and erected by the Austin Company, contributes to high working efficiency by an even distribution of daylight through sawtooth monitors. Used air is exhausted through roof ventilators. All waste is disposed of in the covered steel bins provided alongside each work bench.

Lathes being painted on the assembly floor at the Monarch Machine Tool Co., Sidney, Ohio, within a few feet of other operations with no walls or partitions of any kind to screen off the sprayers. This is made possible by exhausting the air at the rate of 22,400 cu. ft. per min. through the 7 x 12 ft. grating in the floor. The paint-laden air is washed to remove solids, then discharged outside, thus eliminating the fire hazard.

NEW FRONTIERS IN INDUSTRIAL GOOD HOUSEKEEPING

Goodrich Rubber employee in Akron adequately protected against harmful fumes with the use of a specially developed respirator.

Sanitation facilities of the most modern design have been built into the Monarch plant. Specially designed cabinets that serve both as delivery trucks and storage units are used by The Monarch Machine Tool Co., Sidney, Ohio, to handle the dozens of small parts that must be continually supplied men on small-lot sub-assembly lines. These parts-assembly trucks are loaded in the stock room, with the supply of detail parts conveniently placed in handy compartments, then wheeled to positions alongside the workmen's benches and left there.



The new Square D Company plant in Milwaukee, Wisconsin, built and engineered by the Austin Company, is a splendid example of good housekeeping practices. Toilets and wash fountains for factory employees are concentrated in mezzanine quarters centrally located to serve the entire personnel, while individual employee lockers are distributed among the several departments. Punch presses are motor driven and are served directly from square-duct which has been utilized for power distribution to more than 275 individual machine locations. There is an abundance of daylight throughout the plant, admitted through continuous sash along the rear wall and in the monitors. Storage of dies and other tools has been provided in bins built directly beneath the windows along the outer wall, as well as in other locations throughout the plant.

Detroit automobile manufacturers are doing splendid work in developing conditions for keeping their employees healthy. This photograph illustrates a well ventilated booth for automobile body finishing. Note also the protective clothing for the worker.

LEHIGH builds foot-safety on a firm foundation

SOLE LEATHER COUNTER helps to protect heel of foot.
GENUINE LEATHER HEEL PAD eases walking. Made like a quality dress shoe.
STEINBRECHER STEEL SHANK riveted shank-to-sole to prevent squeaks, provides comfortable arch-support.
GRAIN-LEATHER INNERSOLE ventilated arch.
SOLID LEATHER HEEL
FELT "CUSHION" LAYER over steel toe box prevents cutting or tearing of outer leather in normal service.
HUSKY "CHROTAN" LEATHER SOLE developed by Lehigh, combines the flexibility of oak leather and the long-wear of chrome leather.
STURDY LEATHER outer toe-cap.
FIBRE TOE BOX under steel toe box insulates foot against warm or chilled metal.
GRAIN-LEATHER LINING to tip of shoe provides smooth, comfortable inner surface.
ARMORPLATE STEEL TOE BOX built to prevent toe injuries. Note "TURNED-RIM" which fixes the toe box solidly in place so it can't shift or tilt under the heaviest blow.

See us in
BOOTHS 16 and 17
at the
GREATER NEW YORK SAFETY CONFERENCE

LEHIGH SAFETY SHOE CO., INC.
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Consider two angles when buying respirators. First, get the correct type for your danger; second, get a respirator combining highest safety, comfort, ease of breathing and serviceability.

Pulmosan Respirators assure both; the most complete line on the market, offering the most features. Tell us your needs. Get literature.

EVERYTHING FOR INDUSTRIAL SAFETY

Pulmosan can meet all your safety needs; Goggles, Masks, Safety Clothing, Gloves, Chemical Handling, Tools, First Aid, etc. If it's for safety, we have it.

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Autovent Celebrates 25th Anniversary

This year marks a quarter of a century of ventilating progress for the Autovent Fan and Blower Company of Chicago, Illinois. Organized early in 1916, they have continually improved and expanded their line until today their ventilating products are known as "The Complete Line" of fans, blowers, and unit heaters.

Under the conservative guidance of Joseph E. Truitt, president, and Emil Ackerman, secretary, Autovent has prided itself in an ability to maintain the highest quality of materials and workmanship regardless of changing market conditions. Today, every piece of equipment carries certified ratings in accordance with their several recognized association memberships. This assures users of guaranteed performance.

The company is a member of the National Association of Fan Manufacturers. They are also members of the Propellor Fan Manufacturers Association and the Industrial Unit Heater Association.

Shoe Poster

"The poem on *Safety Shoes,* which appeared in the February issue, can be gotten in poster form from the National Safety Council. This is Poster No. 6466. Inadvertently this information was not included previously."

W. T. CAMERON, Chief Safety Adviser

Some Safety and Defense Facts

THE manufacturing industries most closely connected with the defense program employed approximately 5,260,000 wage earners in 1939. By the later part of 1941 it is estimated that these same industries will be employing 6,859,000—or approximately 1,600,000 more workers, most of whom will be, "green" or "rusty" and who will need to be trained, oriented and taught to work safely.

It has been stated that it costs between $150.00 and $500.00 to train or "refresh" a skilled worker for defense production. A study made recently indicates that some of our largest and best managed industries have been able to practically wipe out job accidents for an expenditure of about $14.00 per year, per employee. It looks as though it would be pretty good business to spend that $14.00 to keep the presently employed, experienced man on the job! The work and expense of training 1,600,000 is going to be hard enough without adding several thousand more to replace those who may be lost through accidents.

Several reports have reached Washington recently that off-the-job, traffic, home and public, accidents are responsible for the death or disability of from 6 to 10 experienced workers for every one injured or killed in the factory. Assuming that a man spends 8 hours at work and 8 hours sleeping this would indicate an accident problem 6 to 10 times greater during that 8 hour period when the worker leaves his "hazardous" job in the factory for the peace and quiet of the street, the public park or the home. *Every* accident now, cripples defense!

Guard Your Hands Against Infection

DU PONT "PRO-TEK" is a greaseless cream which prevents grime and paint adhering to your hands, and helps to protect the skin from physical contact with materials which may cause irritation. E. I. du Pont de Nemours & Co. (Inc.), Dept. 4-O, Wilmington, Delaware.

DU PONT
PRO-TEK
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THE INVISIBLE GLOVE

An idea of what the billion and a half man hours lost annually through work accidents amounts to in terms of production was recently furnished to us by one of the defense agencies as follows:

Estimating just the labor required at the site of construction a billion and a half man hours of production could build,

15,000 to 18,000	Large bombers
30,000	Medium bombers
75,000 to 98,000	Fighter planes
12,500 to 225,000	Trainer planes (depending on type)
195,000	Light tanks
450	Submarines
375	Destroyers
45	Battleships

It should be understood that these estimates do not include the labor required off the site for raw materials or partially fabricated parts; they represent the labor required at the site of construction. The essential point, however, is that each of the above items represents what one and a half billion man hours will produce and is therefor an understandable illustration of the staggering losses to industry resultant from injuries, and an unanswerable recommendation for the furtherance of safe practices.

Defense Construction Safety

A meeting held recently by the Secretary of Labor, and attended by the heads of the principal Government agencies awarding defense construction contracts has brought about the development of a Federal safety code and a uniform contract clause outlining the contractors' duties in the prevention of accidents. Covering the major hazard encountered in excavation, frame construction and the use of mechanized equipment, the Federal safety code sets forth specific requirements on such subjects as, the shoring of trenches, safe loads for rope and chain, guard rails, ramps, runways, ladders and various types of scaffolds. To be incorporated in both "fixed-price" and "cost-plus-a-fixed-fee" contracts the new clause

on accident prevention reads as follow:

"In the performance of this contract the contractor shall comply with all pertinent provisions of the "safety requirement for excavation, building and construction," and will furnish and cause to be used such additional safeguards, safety devices and protective equipment as the contracting officer may determine to be reasonably necessary to protect the life and health of its employees. The contractor will maintain an accurate record of, and report to the contracting officer on forms prescribed and furnished by the contracting officer, all accidents arising out of and in the course of employment on work under this contract resulting in death, occupational disease, or injury requiring medical attention or causing loss of time from work. Nothing in this article shall be construed to relieve the contractor from compliance with applicable State and local safety, health and sanitation laws."

Conservation of Manpower

A "policy and procedure bulletin —a guide in making plant call," has just been sent to the now over 300 special agents of the National Committee for Conservation of Manpower in Defense Industries. While emphasizing that it is expected that each special agent will suit his approach to the conditions encountered, basing his course of action on his own experience and best judgment it lists suggested procedures and helpful hints in handling plant assignments. Under the heading "Services Available to Defense Industries," the special agent is reminded to describe the services that he and other members of the National Committee are prepared to render, as follows:

(a) If there is no formal program of safety, that you can assist in setting up an organization to fit the plant.

(b) If the plant already has a going safety program, that you will be glad to consult with the safety director or the safety committee.

(c) That, if requested, you will make a tour of the plant to observe generally its safety condition. If the management states that a tour of the property is unnecessary, this is not to be taken as an indication of unwillingness to co-operate as long as you are satisfied that an adequate program is in operation.

(d) That you are willing to make (or arrange for) a detailed plant inspection of all phases of its operations, furnishing him with a confidential list of recommendations.

(e) That through the National Committee you can arrange for the services of industrial hygienists, first aid training specialists, speakers, etc., without cost to him.

(f) That you can supply a number of publications and posters which will be of interest to operating officials, members of the safety committee or are available for direct distribution to the workers.

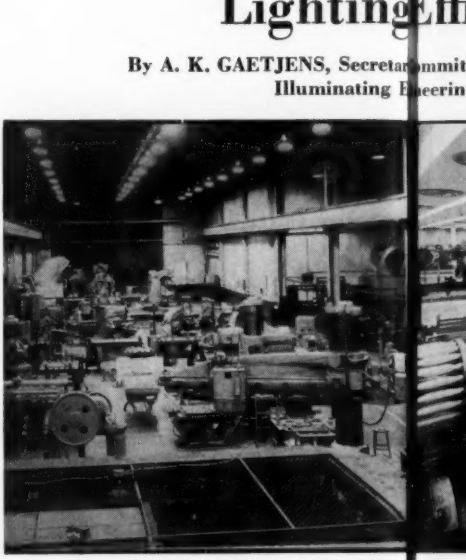
Covering in detail such subjects as "status of special agents," and "necessity for follow-up call," the bulletin ends with the advice, "remember the purpose of the Committee is to provide contractors in the national defense program with advisory safety service. You are the adviser!

Are You Getting Lighting Efficiency?

By A. K. GAETJENS, Secretary Committee
Illuminating Engineering

THE MOST important single factor in industry today is skilled man-power. Trained personnel is not only extremely important but well-nigh irreplaceable. Therefore, any wastage of man-power which impedes maximum national production menaces the security of the country. Under normal circumstances industrial accidents in American industries are responsible for approximately 16,000 deaths and 1,500,000 disabling injuries and result in the loss of 1,500,000,000 man hours. Industry has accustomed itself to this loss, and apparently can absorb it without paralyzing effect under average conditions.

However, in an emergency which requires a maximum uninterrupted output of urgently needed material and equipment this labor waste is a subject for grave concern. Injury or sickness materially retard the production program. Another factor which will accentuate this situation is the number of new workers who will be going into industry to face new and unfamiliar work hazards. This added to the stress of maximum production over longer periods will create an accident potentiality much greater than its normal value. Thus it is evident that any means of reducing accidents, in effect, adds just so many man hours to our production effort.



Good lighting in this plant helps to solve a difficult plant housekeeping problem. Following relighting there was a virtual elimination of minor accidents and torn clothes.

Light Sources

Every avenue to greater overall efficiency should be carefully explored. By "greater overall efficiency" is implied not merely a higher production rate at the expense of plant personnel and equipment but a true overall increase in efficiency, which results in higher production with reduced spoilage and with reduced strain and effort on the part of the plant personnel. The last factor is extremely important as a cause of accidents, spoilage and poor plant morale. Abundant light is the most effective agent for promoting these ends which has not yet been well tested. Plant lighting of the past has had numerous drawbacks which would inhibit its use. Light sources were

Getng Maximum
tingEfficiency

, Secretar ommittee on Light and Safety
inating E eering Society

Uniform seeing conditions on each machine are obtained from 40 ft. candles of continuous-row of fluorescent lighting.

comparatively small and bright, thus creating an undesirable pattern of direct and reflected glare, relatively sharp shadows and a general harshness which is characteristic of relatively small, physically widely spaced reflector, lighting systems. This was no fault of the lighting industry, but came about because light sources which were used were small in size and extremely bright. Thus, it was necessary to diffuse and spread light from this small light source which introduced glassware into a plant as well as metal reflectors to obtain the best possible lighting. Such fixtures were not particularly desirable from the standpoint of simple, effective maintenance. Thus it was that industrial artificial lighting seldom received the attention which it rightly deserved but was rather regarded as a necessary evil.

Today, however, the lighting business can offer industry a new light sources which changes the situation completely. Because of its low brightness and extended size, the quality of lighting produced by fluorescent lighting equipment of proper design is usually superior to that of a tungsten fiament lighting system. For this reason the industrial world has watched with great interest first, the experimental and now the practical application of fluorescent lighting. This new light source in most cases is the efficient way to obtain higher illuminations which have been generally recognized as desirable but difficult to attain practically.

Light and Aetivity

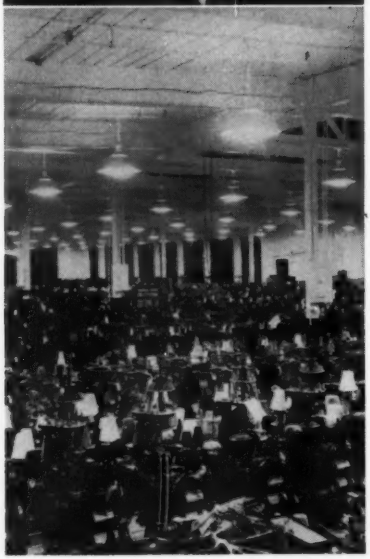
Let us examine for a moment the relation between light and human activity. An overwhelming proportion of our mental impressions are received through the eye. Psychologists have estimated that for the average person 7 out of 8 are thus received. Consequently it is logical that any means of aiding the visual

Lighting Facilities Require Maintenance Attention for 100% Effectiveness. Workmen Need Better Light.

A typical textile mill in the pre-general lighting era. Seeing conditions are extremely trying.

sense will improve the overall efficiency (as defined above) of the people in the plant. Progressive industry recognizes this in providing eye examinations and optical prescription for glasses. By and large, however, industry has not recognized how extremely dependent eyes and seeing are upon the environmental factor of light and lighting. In many cases the individual is considered extremely carefully, and every effort is made to insure his maximum ocular efficiency. However, he is frequently handicapped as much by poor light in his surroundings as he would be without glasses if he needed them.

Safety engineering in industry consists essentially of mutually adapting the workman and his environment so perfectly that he can work without injury to himself or to others. Notable advances have been made in recent years in analyzing accident causes and perfecting safety devices for their prevention. Meritorious educational work is implanting a sense of responsibility in the individual workman. These developments have been notable contributions for greater safety. However, it is generally recognized that in most situations the individual workman is the final arbiter of his own safety—"A careful workman is the best safety device." Yet how much have we considered his ability to recognize his



The same mill as above following relighting. 35 ft. candles throughout the room create a favorable seeing area.

situation accurately and quickly? Seeing as a human activity and almost universal factor in safe plant operation has received comparatively little attention.

Light and Accidents

Seeing is a day-long, week-in and week-out activity. In common with most other human behavior, short-period tests often indicate compensation or over compensation by the subject. In other words, over relatively short periods a man can maintain a given grade of work under poor seeing conditions without apparent detriment. However, this is done at the expense of his nervous and visual strength which eventually reduces his usefulness due to fatigue or impaired seeing ability. Under such conditions he can be accurately described as "accident prone." Also, if an accident should occur, it is seldom recognized that poor illumination was a contributing factor. Everyone has observed men who face windows 10 or 12 feet away while engaged in intricate machine or bench operation. Window brightnesses may range from 100 to 10,000 footlamberts, while it is rare that the brightnesses of the working surfaces are more than 10 to 20 footlamberts—and they are often much less. These working conditions are extremely fatiguing to the eyes, yet they are seldom, if ever, considered contributory to an accident. Such accidents frequently list negligence or carelessness of the workman as contributory, where actually the environmental factor of poor lighting and excessive glare from the windows may be responsible in large part.

MELFLEX *Means* Safety Underfoot..

Good Housekeeping in Industry demands the elimination of underfoot hazards . . . MELFLEX flooring, treads and mats assure long, SAFE service. . . . Our new catalog answers every underfoot safety problem. A copy is ready for you. Write for it today.

Melflex Products Company
222 Merriman Road, Akron, Ohio

For this reason it is obvious that accident cause reports, even the more carefully planned ones, do not present a complete picture of the relation between light and accidents. As a matter of fact, detailed analyses of the accidents in which poor light is listed as a contributing cause seem always to show clearly that this cause is given only for a *lack* of light, and therefore does not include the great majority of cases where poor lighting may have affected the man's judgment by visual or nervous fatigue.

Maintenance

The continued use of good lighting following its installation is dependent upon just *one* often neglected factor—proper maintenance of the lighting system. Good plant housekeeping is a fundamental tenet of safety engineering. This phrase usually means having a place for everything and everything in its place. However, there is one other factor to good plant housekeeping, keeping the lamps and reflectors of the lighting system clean and efficient.

(Please turn to page 40)

Right off the Docket

The trend of litigation on workmen's health and accident compensation is reflected in these briefs of the latest and most representative cases coming to trial in the intervals between issues. Familiarity with this trend is important to every industrialist.

Failure to Ventilate Mine Properly Subjects Owner to Law Suit for Damages From Silicosis

Silicosis was not a compensable ailment covered by the Minnesota Compensation Act. However, in this case the Court held, that an underground miner who becomes afflicted with a disabling ailment not covered by the compensation act—in this case silicosis—through negligence of his employer amounting to an omission by the employer to perform a statutory duty—in this case failure to ventilate an underground mine properly—may maintain an action at law for damages against the employer.
Applequist vs. Oliver Iron Mining Co. (Minn.) 296 N.W. 13 (Jan.-1941)

Award for Hernia Granted

The claimant worked for a manufacturer of roll and shingle roofing. In loading, the roofing was carried on a conveyor to the loading platform where it was removed by the "take off man," placed upright on a truck where the "capping man" placed a cap on one end of each roll. The rolls of roofing were 36 inches long, 12 inches in diameter, and weighed 90 pounds. The claimant was the "capping man," but each day when the "take off man" went to lunch the claimant took his place. One day while the claimant was engaged in taking the rolls from the conveyor and stacking them in the truck, he was forced to work with great haste because the rolls were coming too fast and were beginning to pile up on him. While lifting one of the rolls he sustained a hernia. The claimant had never suffered from hernia before.

The Court held the hernia to be an accidental injury and compensable. The opinion stated that if, as a result of a strain in lifting some heavy article for his employer, an employee dislocates his vertebrae, or breaks his wrist, or ruptures a blood vessel, it could not be seriously insisted that such unexpected injury was not accidental. If the strain or "stretching" as the claimant in this case termed his act which caused the injury, instead of causing one of the injuries just enumerated, produces a hernia, the occurrence is none the less accidental.
Webster vs. Lloyd A. Fry Roofing Co. (Tenn.) 146 S.W. 2nd 946 (Feb.-1941)

Massachusetts Holds Wearing Out of Body Over Period of Years Not Compensable "Personal Injury"

The employee was a laster of shoes for many years. One day after lasting two cases of shoes of 36 pairs each, he felt a sharp pain while pounding with his hammer, dropped it, and was unable to continue his work. It was disclosed that pain and stiffness in the hands, wrists and arms of the employee had begun about two years

before this occurrence. The medical testimony was that the incapacity was not due to any specific trauma (blow), but rather to the continued use of the wrists and hands in the occupation of a laster.

The Court found that there was no compensable "personal injury" suffered in this case. It stated that the gradual wearing out of the body through years of toil is not a "personal injury" within the meaning of the Massachusetts Compensation Act. The Compensation Board's denial of an award was upheld.
Belezarian's Case (Mass.) 31 N.E. 2nd 4 (Dec.-1940)

Strain of Pushing Car Causes Failure of Previously Weakened Heart

After an automobile show it was necessary to push the cars that had been on display to a place where their tanks could be filled with gas. The employee in this case, while pushing one of the cars, collapsed and fell dead. The employee had been suffering from heart disease, and the exertion of pushing the car caused his heart to fail.

An award for the death was granted. The Court held that an accidental strain of a heart previously weakened by disease is a compensable injury where the accident causing the death arises out of and in the course of employment.
Mergelsberg vs. Brick Church Buick Co. (N.J.) 17 Atl. 2nd 152 (Nov.-1940)

Heat Exhaustion Held Compensable

The Oklahoma Supreme Court stated the following to be the test in heat exhaustion cases: "If the place of the employee's work, by reason of its location and nature, would likely expose him to the danger of sunstroke, or if the risk of injury by sunstroke is naturally connected with and reasonably incident to his employment, as distinguished from the ordinary risk to which the general public is exposed from climatic conditions, the master will be liable for the consequential injuries."

In this case the claimant was engaged in digging a ditch in sandstone rock for a culvert and was below the surface or level of the earth when he stooped in the process of digging. He worked from about 1 P.M. until 3 P.M., when he became too hot, weak and nauseated, and was taken home. These facts were held to be sufficient to meet the test mentioned above, and an award was granted.
Nims & Frost et al vs. Abner et al (Okla.) 109 Pac. 2nd 237 (Jan.-1941)

FOR SAFETY WITH COMFORT

DAVENPORT WOOD SOLE SAFETY SHOES

WOOD SOLE SAFETY SHOES protect your workers where underfoot conditions are too tough for ordinary shoes. Maple soles, cut for ease of walking, long outwear regular soles. Available with or without *Safety Toe*. WRITE FOR FREE CATALOG and latest prices!

F. J. STAHMER SHOE CO.
2351 Boise Ave., Davenport, Iowa

Denial of Award for Injury From Use of Pneumatic Air Hammer Reversed

From April, 1937, until December, 1938, the employee worked in an automobile repair shop. From one and one-half to two hours each day during this period he operated a pneumatic air hammer. The constant vibration of the hammer caused a numbness of his hands and fingers, and in November, 1938, the employee's hands broke down. The employee's claim for compensation was denied on the ground that he did not suffer an accidental injury in the course of employment.

On appeal this denial of an award was held to be contrary to law. The injury suffered was held to be compensable, and the case was returned to the Industrial Board for further proceedings in line with such holding. *Weir vs. Coridan (Ind.)* 31 N.E. 2nd 83 (Jan.-1941)

By Hilton E. Roberts

New ... IN THE ...

HYDRAULIC HAND LIFT TRUCK—The Yale & Towne Manufacturing Company, Philadelphia, Pennsylvania, announces a perfectly balanced hydraulic hand lift truck—the "Load King" Hydraulic Truck.

Features include, according to the manufacturer, easier steer, greater safety to operator, lower maintenance and controlled lowering of loads, with capacities ranging from 3,500 to 8,000 lbs.

EXHAUST HOSE—The B. F. Goodrich Company, Akron, Ohio, announces a new line of specially constructed exhaust hose for conducting fumes and abrasive dust.

The hose is light and flexible, easily bent at short angles so that it may be easily located right at the machine or spot from which the fumes may originate.

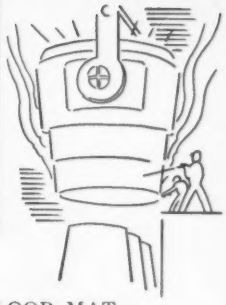
Made with smooth rubber tube, helical wire reinforcement plies of fabric and corrugated rubber cover. The hose is manufactured in sizes ranging from 2 to 12 inches in diameter, in 8, 15 and 25 foot lengths.

Tubes are especially compounded because the velocity of the dust laden air creates an abrasion problem.

WRITE THE EDITOR FOR FURTHER DETAILS

TEST ON LENSES—Recently completed tests have been conducted by The Univis Lens Company, Dayton, Ohio, on their new Tulca Safety Goggle Lenses.

Officials of the company say that these tests have shown Tulca lenses



to possess greater uniform strength than some tempered glass lenses.

Impact tests using 1, 2 and 3 oz. steel weights indicate that all Tulca lenses show resistance to impact to the end of the sixth impact, which consisted of a 3-ounce weight being dropped from a height of 54".

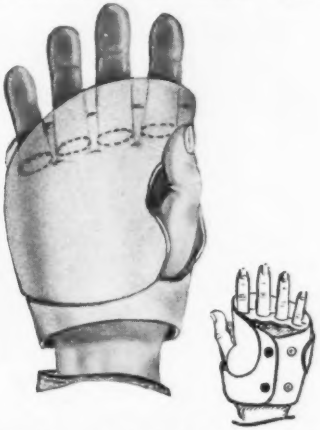
CONCENTRATED LIGHT—The new Birdseye Floodlite designed for general lighting purposes delivers a concentrated flood of light in a medium beam that is effective in applications requiring intense illumination for exacting work. Essentially an incandescent filament bulb, the floodlite has a lining of pure silver sealed inside to form a reflecting surface that cannot be dulled or tarnished by dust or fumes. For local-

ized lighting to supplement general illumination, a detachable swivel socket focuses the light exactly where needed. Made by Wabash Appliance Corporation, Brooklyn, N.Y.

SAFETY STEEL FLOOR MAT—A new industrial steel safety mat that can be easily cleaned, has a flexible, non-skid grid and can be rolled up like a rug is being manufactured by the Wm. F. Klemp Co., Chicago, Illinois.

Mats are furnished cut to any length up to 25 feet; any width up to 6 feet; and are supplied in multiples of these dimensions. Ends of adjacent mats are joined together with stringing wire, one wire being required for each connection.

FINGERLESS "BUNDLER'S" HANDGUARD—A chrome leather



fingerless handguard has been designed by the Industrial Gloves Com-

pany of Danville, Illinois, specifically for the use of "bundlers" in the handling of corrugated sheets and cases. With an extra leather patch over the palm section the guard fits snugly, giving freedom and flexibility for picking up, catching or handling thin materials. Made in three sizes with adjustable snap buttons for fastening at the back—small for women operators, and medium and large for men. May be had in pairs, or for left or right hands only as required.

WINTER LINING FOR PROTECTIVE HEADGEAR — The Mine Safety Appliances Company announces a new type of winter lining for Skullgards which is designed and attached to the Skullgard so that every part of the head, neck and ears are covered to provide protection against cold and snow.

The M.S.A. Zipper Type Winter

Lining consists of two parts—(1) A Skullcap, laced into the Skullgard shell integral with the sweatband, and (2) Earlugs, that zip into this skullcap. This lining can be readily assembled into a Skullgard in the field and will not effect the original sweatband size.

Both parts of the Winter Lining are made of water repellent Grayfall cloth having a lining of warm woolen material. Furnished in two sizes for large and small Skullgard shells.

INDUSTRIAL VACUUM CLEANER—The Black & Decker Mfg. Co. has just perfected a high powered industrial vacuum cleaner which they call the No. 95 Vackar. This unit is powered by a 1 H.P. motor driving a 3-stage centrifugal fan, has a sealed vacuum pull of 65 inches, and draws 60 cubic feet of air per minute.

With both inlet and outlet hose connections it can be used as a vacuum cleaner or a blower. The unit is self-contained, mounted on swivel casters and equipped with 15-foot flexible hose.

WRITE THE EDITOR FOR FURTHER DETAILS

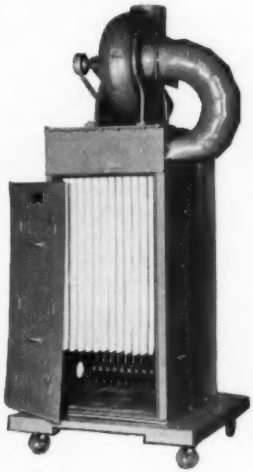
PLASTIC VALVES FOR RESPIRATOR—The miniature, Dupor No. 1 nuisance dust respirator recently announced by H. S. Cover, South Bend, Indiana, has been made lighter by replacing aluminum valves with molded plastic ones. Weight now reduced under one ounce. This respirator designed to fit over nose only is held in place by elastic ear bands, and can be worn like a pair of glasses. Nose piece is of soft rubber with 9 sq. in. filter pad. Price is $1.00.

CLAMP IT TIGHT—An improved style of safety lifting clamp, equipped with a replaceable, grooved, hardened steel jaw liner is announced by the Never-Slip Safety Clamp Company.

These clamps, made for either horizontal or vertical lifting of steel plates, sheets or sections, are available in ten styles for handling material weighing up to twelve tons, and from ⅛" to 6" in thickness.

The replaceable plate lines the face of the jaw and contributes to its lifting and holding qualities. The plate is replaceable.

LOW-PRICED, PORTABLE DUST FILTER—The W. W. Sly Mfg. Co. announces an improved model of their Economy Dust Filter—a unit used as an auxiliary to larger filters, or with individual machines requiring exhausting, such as grinders. Mounted on a platform with rubber-tired casters, the filter is portable, and can be moved from grinder to grinder. Little space is required as the exhaust fan is mounted on the filter. The unit is also supplied unmounted, and can be placed on the floor, against a wall, or suspended overhead.



Handling 1000 cu. ft. of air per minute, the filter is shipped completely assembled, including a 3 H.P. motor which operates at 1800 RPM.

SAFETY EMBLEMS—The design department of Williams Jewelry & Mfg. Co., Chicago, Illinois, has just completed two new stock safety emblems. One is made as an identifying emblem for the Safety Engineer while the other is worded in Spanish to fill the increasing demand for Safety Committeeman emblems in the Latin and South American countries.

Each bears the official safety cross

motif. The price is listed at $7.50 per dozen.

GAS ALARM—The new Mine Safety Appliances Explosion-proof Combustible Gas Alarm is for safety and continuously sampling atmospheres where combustible gases and vapors may be present. The unit provides instant warning when gas concentrations exceed a predetermined limit, and may be adapted for automatic process or ventilation control.

The instrument is specifically calibrated for the particular gas or vapor which it will test. It is so constructed that the operator can adjust the measuring circuit to operate a warning signal at any predetermined point within a wide range.

Cost of Eye Protection

(Continued from page 19)

targets! Consider these significant figures.

In 1940 the National Safety Council published a book called Accident Facts. From this book we learn that during the year 1939 occupational accidents cost this country $600,000,000. This huge sum, incidentally, would build 100 submarines or 15 aircraft carriers—sufficient to give us a good running start on the two-ocean navy we need.

31,860,000 Annual Eye Accident Cost

Some time ago we had an opportunity to make an analysis of the cost records of more than 234,000 compensable accidents.

Here's another interesting, significant fact. According to figures published by the National Safety Council, 72 per cent of all eye injuries happen on jobs generally regarded as non-hazardous to eyes. Safety men should remember these statistics when surveying their plants for eye-hazardous jobs.

Flying objects—chips and fragments of metal, flakes of scale and paint, pieces of rock, splashes of liquids, and particles of dust—present the chief industrial eye hazards.

Daily these hazards assume greater importance to management as well as workers in view of the speed-up in production necessitated by the National Defense Program. Industrial accidents are already showing an alarming increase. This is due, in part, to the carelessness generated by speed as well as the employment of untrained workers.

The price of eye safety is eternal vigilance. Obviously, the first line of eye defense is the wearing of scientifically designed safety goggles, specifically developed to provide maximum protection against flying particles. They should also provide wearing comfort and unimpaired vision.

The safety lens considered good enough 20 years ago is no longer acceptable or even safe in the face of current high-speed operations. Hardened lenses, made by carefully controlled processes, are now able to withstand far greater impacts than required by the U. S. Bureau of Standards' drop ball test. This test consists of dropping a $\frac{5}{8}$" steel ball on a lens from a height of 39 inches.

Recently, another step forward was taken. To determine scientifically the impact resistance of eye-protection lenses, there has been developed in American Optical Company laboratories new test equipment which projects a hardened steel pellet at a lens by means of compressed air at veloci-

ties up to 100 miles per hour.

This test will help researchers decide what type of safety lens should be worn to resist various kinds of flying particles. At the same time it will assist in evaluating scientifically the progress being made in the design of improved safety goggles for industrial workers.

A discussion of safety goggles would not be complete without mention of glare-protection goggles whose lenses absorb dangerous invisible ultra-violet and infra-red rays, chief hazards in welding operations. Development of these lenses can justly be considered an outstanding achievement in glass technology. It should also be remembered that absorptive glasses like Calobar may be hardened to resist impact.

The analysis showed that 5.31 per cent of the money was paid out for eye accidents. If we apply this percentage against the total of $600,000,000, we find that approximately $31,860,000 are paid out yearly to cover the cost of eye accidents.

The average compensation and medical cost of an eye injury is $343. This is money actually paid out by insurance companies for medical expenses and for compensation to workers who had eye accidents. The average cost of compensation and medical attention for all other accidents, excluding eye accidents, is $194. Note that the cost of compensation and medical attention for an eye injury is almost double that of other injuries.

Verily, eyes are expensive targets—for plant owners, insurance companies, and workers.

An adequate eye protection program actually represents good business from every point of view. Every executive wants to reduce expenses and save costs, and the saving of eyes is both humanitarian and profitable. Furthermore, the price of eye safety is small indeed. A safety goggle can be purchased for $1.50 whereas $1,800 is the average cost of a blinded eye in compensation alone—not counting the medical expense, lost time, lost production, and other hidden costs.

Lighting—

(Continued from page 31)

Cost studies have revealed that merely from the standpoint of the cost of the light which is lost by absorption on dirty surfaces, neglecting entirely the more important factors of the effect of the decreased light upon plant operation, it is economical to clean reflectors under normal circumstances at intervals of from one month to ten weeks, depending upon the rate at which dirt accumulates. This is much more frequent than the usual cleaning program, and yet a simple study of the cost of the light

How to Clean Lights

There are a number of ways in which the cleaning of lighting equipment can be facilitated. In

Automatic disconnecting hangers in a foundry permits convenient, rapid and safe cleaning of the lighting equipment.

cases where it is difficult to reach the equipment because of its high mounting or the lack of a crane, automatic disconnecting hangers are frequently employed. With such equipment the lighting units can be lowered to the floor by means of a chain which is fastened to the reflector. Such devices are highly recommended not only because of the greater safety which they afford but also the decreased cost of cleaning through the great decrease in the time necessary for cleaning. In other plants telescoping platforms permit safe maintenance of high, inaccessible locations. They are of particular benefit in plants where it is frequently necessary to reach a position or equipment which cannot be conveniently lowered. Also, most manufacturers of industrial lighting equipment list reflectors which can easily detach from their mountings. The maintenance men can clean one reflector and carry it to the next position, leaving the first outlet vacant. Hanging the clean reflector on a hook on the ladder while disconnecting the dirty reflector at this outlet, he can hang the dirty reflector on the second hook and put the clean reflector in its place. Thus it is necessary to climb to the out-let only once instead of twice.

The gradual accumulation of dust and dirt upon lamps and reflecting surfaces is often unnoticed because it is uniformly deposited and cannot be seen by contrast with a clean surface. An installation can depreciate to 50 per cent or less of its initial value before it is realized that inadequate illumination probably is responsible for a greater number of accidents.

(To be concluded)

This DEEP-CURVED Super Armorplate Lens...

OFFERS

More Certain **DEFLECTION**

and Greater **PROTECTION** *for Eyes*

American Optical Goggles, equipped with Deep-Curved Super Armorplate Lenses, give workers the security of *extra* impact protection. These lenses are made from highest quality ophthalmic crown glass, optically ground and polished . . . toughened by a highly efficient heat treating process to give them their great fracture-resisting qualities.

But *extra toughness* is only *one* advantage of the Deep-Curved Super Armorplate Lens. This equipment is also more certain to deflect flying chips. It fits closer to the eye, yet gives greater eyelash clearance. *And Deep-Curved Super Armorplate Lenses can be ground to the individual prescription of every worker with defective vision.*

Ask your American representative to demonstrate the special advantages that Deep-Curved Super Armorplate Lenses have for the many different goggles in the American Optical line.

American Optical Company

Factories at Southbridge, Massachusetts

9402

A SOAP TO SAVE WORKING EFFICIENCY

SOOTHING... NOT ABRASIVE
SOFTENING.. NOT CAUSTIC

ECONOMICAL BECAUSE OF ITS HIGH NUMBER OF WASHES PER POUND . . . AND SO EFFICIENT

Though dermatitis cases involving compensation claims may be few, mild forms of impaired skin health may effect the working efficiency of many of your workers. One aggravated case can, of course, involve so much in compensation award that the wash-up situation needs attention for that alone. We prefer, however, to predicate the management economy of using LAN-O-KLEEN on its aid to improved productive effort all along the line.

LANOKLEEN

a corn-meal soap impregnated with anhydrous lanolin is away-and-beyond the common concept of an industrial hand cleaner. No abrasive grit. No parching causticity—for the acid-reacting lanolin completely buffers the mild soap alkali. The skin receives an emollient coating of the lanolin oil, and tends to remain moist and flexible. It is common experience to find men's hands losing the stiffened feel that comes with the washing away of the natural skin oils.

LAN-O-KLEEN a superior hand cleaner, costs no more per washing than old-style soaps. . . . That's a statement we'd like to elaborate in your office—if you are interested.

May we call for the purpose—or mail you the LAN-O-KLEEN folder for your advance study.

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I am interested in your FREE TRIAL offer of a Dispenser and sufficient LAN-O-KLEEN to test out for 2 to 3 weeks in one department. Please get in touch.

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